

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**Precision microwave electrodynamics of K and Co - doped  $\text{BaFe}_2\text{As}_2$**  RINAT OFER, JAKE BOBOWSKI, JORDAN BAGLO, SHUN CHI, JAMES DAY, PINDER DOSANJH, BRAD RAMSHAW, LYNNE SEMPLE, RUIXING LIANG, WALTER HARDY, DOUG BONN, University of British Columbia — We present a detailed cavity perturbation measurement of the microwave electrodynamics of single crystal iron-based superconductors. The measurements, down to  $\sim 0.4\text{K}$ , were performed on  $\text{Ba}_{0.72}\text{K}_{0.28}\text{Fe}_2\text{As}_2$  hole-doped with  $T_c \sim 30\text{K}$ , and  $\text{BaFe}_{1.9}\text{Co}_{0.1}\text{As}_2$  electron-doped with  $T_c \sim 20\text{K}$ . Our results show that the temperature dependence of the in-plane London penetration depth  $\Delta\lambda(T)$  does not exhibit the exponential saturation at low temperatures expected from a fully-gapped superconductor. In addition we present broadband surface resistance measurements of two FeAs samples and discuss the behavior of the in-plane superfluid density  $\rho_{ab}(T)$  in light of existing theoretical models proposed for the iron pnictides superconductors.

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Date submitted: 24 Nov 2009

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